



DSA BULLETIN #06-01

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**To: DSA Regional Offices
School Districts**

**From: Division of the State Architect
Department of General Services
State of California**

SUBJECT: 2008 Requirements for Kitchen Hood Fire Suppression Systems

Reference: 2008 California Fire Code (CFC), Section 904.11

Purpose: To alert owners to an emerging hazard and new requirements in connection with the use of Kitchen Hood Fire Suppression Systems currently installed in cooking kitchens in facilities under the jurisdiction of DSA.

Background: Type I hoods with automatic fire suppression systems are required by the 2007 California Fire Code, Section 904.11 as amended by the State Fire Marshal. This section requires **new** systems to comply with UL 300 Standard and to be “labeled for their intended use” and “listed” by the State Fire Marshal.

Discussion: Type I hoods with fire suppression systems are required in “Cooking Kitchens” above equipment that produces “grease-laden vapors,” such as Deep Fat Fryers, Broilers, Fry Grills, Hot-Top Ranges, Barbeques, Rotisseries, and similar equipment which produce comparable amounts of smoke, grease vapors or heat in a food-processing establishment.

Older existing systems may not meet the nationally recognized UL 300 Standard. Older systems were designed for equipment that utilized “animal fats” (lard) as the cooking medium, and can use a “Dry Chemical” extinguishing agent to suppress a fire. Currently most “Cooking Kitchens” have substituted the “animal fats” with “vegetable oils” as the cooking medium for health related issues. Vegetable oils require a higher heat to cook the food and retain heat longer than “animal fats.” Newer cooking equipment is more energy efficient and further preserves the heat due to improved insulation and other technological improvements. Dry Chemical and UL 300 non-

compliant wet chemical extinguishing agents are unable to keep the fire suppressed long enough for the equipment and oils to cool adequately. The Dry Chemical and UL 300 non-compliant wet chemical agent is able to retard the fire, but not suppress it sufficiently. The agent dissipates and the result is a “re-flash” or a re-ignition of the fire. Statistical data indicates a rise in re-flash events, with the main culprit of the re-flash to be Deep Fat Fryers, but other cooking equipment can also be the source.

New systems based on the UL 300 Standard utilize a “Wet Chemical” extinguishing agent which takes longer to dissipate and allows the equipment and oils to cool adequately and thereby prevent a re-flash. Statistical and full scale testing data shows that the newer systems with the Wet Chemical extinguishing agents are not prone to re-flash.

Action:

New Installations: Per CFC, Section 904.11, all new installations of Type I hoods shall be equipped with one of the following DSA approved automatic fire-extinguishing systems:

- A UL 300 compliant wet chemical system
- A carbon dioxide system
- An NFPA 13 compliant fire sprinkler system

Upgrades of Existing Installations: As a result of the failures of Dry Chemical and UL 300 non-compliant wet chemical systems, the State Fire Marshal requires the upgrade of Dry Chemical and UL 300 non-compliant wet chemical systems to the Wet Chemical UL 300 compliant systems no later than the second required servicing of the system after January 1, 2008

Exception: Public schools kitchens, without deep-fat fryers, shall be upgraded to a UL 300 compliant system during state funded modernization projects that are under the jurisdiction of DSA. (This modernization project does not have to include the campus kitchen or building where the kitchen is located.)

NOTE: Warming Kitchens, kitchens with only ovens, and dishwashing areas are not required to have fire suppression systems and are therefore not affected.

If you have further questions or need more information you may contact the California State Fire Marshal by following the link below:

<http://osfm.fire.ca.gov/pdf/informational/020707ProtofRestaurantCooking%20Areas.pdf>